



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,064	10/06/2000	Gordon Ian Rowlandson	39199-9511-00	2853
7590	07/07/2005		EXAMINER [REDACTED]	BUI, KIM T
Joseph D Kuborn Andrus Sceales Starke & Sawall Suite 1100 100 East Wisconsin Ave Milwaukee, WI 53202			ART UNIT [REDACTED]	PAPER NUMBER 3626

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/684,064	ROWLANDSON, GORDON IAN
	Examiner Kim T. Bui	Art Unit 3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 5/11/2004.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-4, 6-29 and 31 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4, 6-29 and 31 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Notice to Applicant***

1. This communication is in response to the amendment filed 05/11/2004. Claims 1-4,6-29 and 31 are pending. Claims 1,10,25 have been amended. Claims 5, 30 are cancelled.

### ***Claim Objections***

2. Claim 6 is objected to because of the following informalities: the dependency of claim 6 is incorrect since claim 5 has been cancelled. For the purpose of examination, it is presumed that claim 6 depends on claim 1. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 6, 8-12,14-17,19-22, 23-29, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardirossian (6011991) in view of Selvester et al (6230048) and Castelaz et al (5003490) for substantially the same reasons given in the previous Office Action, dated 05/11/2005. Further reasons appear below.

(A) Claim 1 has been amended to recite "wherein the interpreting step includes measuring the physiological data, analyzing a set of characteristics associated with the physiological data, extracting one or more patterns from the physiological data and

comparing the extracted patterns from the physiological data to a set of known patterns”.

As stated in the last Office Action, particularly in the “Response to Arguments” section, the limitation(s) directed to the interpreting of physiological signal argued by the applicant is/are well known in the prior art of physiological signal data processing, and is suggested by Mardirossian. Mardirossian’s invention, however, is not specific to the processing/interpreting aspect, but is more directed to the correlating of the interpretation with the library of physiological data records. As such, Mardirossian does not describe the performance of the neural network including the classification module in details. Mardirossian, however, addressed the processing of physiological signal on col. 5, lines 10-25, col. 6, lines 12-16, and col. 6, line 62 to col. 7, line 2. It is noted that the classification operation performed by the neural network disclosed by Mardirossian includes the extraction of selected features and comparing the same to predetermined categories. In addition, these practices are common in the prior art of physiological signal processing, as evidenced by Castelaz et al.

Castelaz et al. discloses a method for processing/interpreting physiological signal including the steps for:

- a. measuring the physiological data. Castelas et al., col. 4, lines 55-64, Figs 1,2.
- b. analyzing the characteristics (i.e. pulse width, amplitude, rise and fall time, frequency etc....) associated with the physiological signal . Castelas, col. 4, lines 55-65, Figs. 1-2.

c. extracting one or more patterns (i.e. features) from the physiological signal and comparing the extracted patterns with the stored patterns for classification purposes when a match is found. Castelaz, col. 4, lines 55-68, Figs. 1-2.

It would have been obvious to one having ordinary skill in the art at the time of the invention to include these common steps disclosed by Castelas et al. to process the physiological signal with the motivation of improving the performance of the system by properly identifying the input physiological signal. Castelaz et al, col.4, lines 66-68.

The remainder of claim 1 is rejected for the same reasons given in the previous Office Action dated 03/31/2005, and incorporated herein.

(B) Claim 10 has been amended to recite "wherein the interpretation module is configured to measure the physiological data, analyze a set of characteristics associated with the physiological data, and extract one or more patterns from the physiological data".

Amended claim 10 repeats the limitations in the amended claim 1 and is rejected for the same reasons given above in the rejection of the amended claim 1.

The remainder of claim 10 is rejected for the same reasons given in the previous Office Action dated 03/31/2005, and incorporated herein.

(C) Claim 25 has been mended to recite "wherein the interpreting step includes measuring the physiological data, analyzing a set of characteristics associated with the physiological data, checking the integrity of the acquired data by extracting one or more patterns from the physiological data, and comparing the extracted patterns from the physiological data to a set of known patterns".

Amended claim 25 repeats the limitations in the amended claim 1 and is rejected for the same reason given above in the rejection of the amended claim 1.

As per the "checking the integrity of the acquired data" recitation. It is noted that the extracting and comparing steps disclosed by Castelaz et al. are performed to recognize the correct patterns of the acquired data in order to properly assign the data in to predetermined categories, the examiner interprets this as a form of checking the integrity of the acquired data. Castelaz et al, col. 4, lines 65-68.

The remainder of claim 25 is rejected for the same reasons given in the previous Office Action dated 03/31/2005, and incorporated herein.

(D) Claims 2-4, 6, 8-9, 11-12, 14-17, 19-21, 23-24, 26-29, 31 have not been amended and are rejected for the same reasons given in the previous Office Action, dated 03/31/2005, and incorporated herein.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mardirossian (6011991) in view of Selvester et al (6230048) and Castelaz et al (5003490) as applied to claim 1 above, and further in view of Cairnes (6139494).

(A) Claim 7 has not been amended and is rejected for the same reasons given in the previous Office Action, dated 03/31/2005, and incorporated herein.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mardirossian (6011991) in view of Selvester et al (6230048) and Castelaz et al (5003490) as applied to claim 10 above, and further in view of Bardy (6203495).

(A) Claim 18 has not been amended and is rejected for the same reasons given in the previous Office Action, dated 03/31/2005, and incorporated herein.

7. Claims 13, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mardirossian (6011991) in view of Selvester et al (6230048) and Castelaz et al (5003490) as applied to claims 10, 12 above, and further in view of Alber et al (6264614).

(A) Claims 13, 22 have not been amended and is rejected for the same reasons given in the previous Office Action, dated 03/31/2005, and incorporated herein

***Response to Arguments***

8. Applicant's arguments filed on 05/11/2005 have been fully considered but they are not persuasive. Applicant' arguments will be addressed herein below:

(A) On page 7 of the Remarks, Applicant argues that Mardirossian does not teach "interpreting the sensed physiological signal according to the predefined criteria to generate an interpretation, and following Mardirossian cannot teach the interpretation with the physiological data records". Examiner disagrees, Mardirossian clearly teaches the step for correlating the interpreted physiological signal and suggested the common practice for processing of physiological data as discussed in the previous Office Action, dated 03/31/05, and incorporated herein.

With respect to the added limitations in the amended claim 1, these steps (i.e. measuring, analyzing, extracting, comparing etc..) are well known in the art as suggested by the classification module in Mardirossian and clearly disclosed by Castelaz et al. See the above rejection of the amended claim 1.

(B) On page 8 of the Remarks, applicant argues there is no suggestion for combining Mardirossian and Selvester and the combination would not include elements as claimed. Examiner disagree, the motivation for combine Mardirossian and Selvester is clearly stated in the Office Action dated 03/312/05, for example, " it would have been

Art Unit: 3626

obvious to one having ordinary skill in the art at the time of the invention to include pictorial display system of Selvester et al into Mardirossian with the motivation of facilitating the operation of the system by providing highly information visual output of the ultimate interpretation. Selvester et al. col. 3, lines 60-65. See the rejections of claims 1,10,25 in the previous Office Action dated 03/31/2005, and incorporated herein.

Mardirossian and Selvester et al. are both directed to physiological interpretation system. As such, it is readily apparent that a person of ordinary skill in the art of physiological analysis is going to look for the display of the physiological interpretation system disclosed by Selvester et al to improve the physiological interpretation system disclosed by Mardirossian with the motivation set forth in the rejections of claims 1, 10, 25 given above and in the previous Office Action, dated 03/31/2005, and incorporated herein.

In addition, it is submitted that the amended limitations regarding the interpreting of physiological data are suggested by Mardirossian and clearly disclosed by Castelaz as discussed in the above rejection of the amended claim 1. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(C) Other arguments on pages 8-11 of the Remarks merely re-hash issues previously addressed in the previous Office Action mailed 03/31/05, and incorporated herein.

(D) Applicant's arguments with respect to claims 1-4, 6-29, and 31 have been fully considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. "Continuous Cardiac Output Derived From Arterial Pressure Waveform Using Pattern Recognition" (5797395), "Method Of Analyzing Cardiac Data Using Correlation Plots" (4934374), " Myocardial Electrical Instability Detecting System" (5694943); "System For Sensing and Analyzing Heart Signal" (6052615), " System For Processing Psychological /Physiological Using A Knowledge Base" (6006188).

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim T. Bui whose telephone number is 571-272-6768. The examiner can normally be reached on Monday-Friday from 8:30A.M. to 5:00P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on 571-272-6776. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
KTB  
07/1/05

  
JOSEPH THOMAS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600